Upper Mississippi River Restoration (formerly Environmental Management Program)

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St. Louis District

RRAT Coordination Event

2015

US Army Corps of Engineers
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Upper Mississippi River Restoration

Program Vision Statement

"A healthier and more resilient Upper Mississippi River ecosystem that sustains the river's multiple uses"

Ecological resilience is the ability of an ecosystem to maintain its normal patterns of nutrient cycling and biomass production after being subjected to damage caused by an ecological disturbance.

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UMRR Goals

- **Enhance habitat** for restoring and maintaining a healthier and more resilient Upper Mississippi River ecosystem
- **Advance knowledge** for restoring and maintaining a healthier and more resilient Upper Mississippi River ecosystem
- Engage and **collaborate** with other organizations and individuals to help accomplish the UMRR vision
- Utilize a strong, integrated **partnership** to accomplish the UMRR vision

UMRR-EMP is….

PARTNERSHIP

Habitat Restoration

Research and Monitoring

PUBLIC

NGO's

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Examples of UMRR Habitat Projects and Benefits

- Shoreline protection
- Water level management
- Dredging
- River training structures
- Secondary channel modifications
- Floodplain restoration
- Island design

- Increase habitat diversity for wildlife and fish
- Provide off-channel resting and spawning habitat for fish
- Provide reliable floodplain wetlands and associated food resources
- Create shelter zones and nesting sites for birds
- Increase quality and amount of bottomland hardwoods
- Increase topographic diversity

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FY 15 District Program

➢FY 14 Budget approximately $7.0M?

•Feasibility/Planning: Rip Rap Landing IL; Piasa and Eagles Nest Islands IL; Harlow and Wilkinson Islands MO/IL; Glades & Godar Wetlands IL; and potential fact sheets for Devils Island, Horseshoe Lake, Delair Refuge???

•Feasibility / Approved Fact Sheets: Wilkinson Island IL; Harlow Island MO; Reds Landing IL; West Alton MO; Pools 24 Islands MO; and Schenimann Chute MO

•Design: Ted Shanks, MO; Clarence Cannon, MO

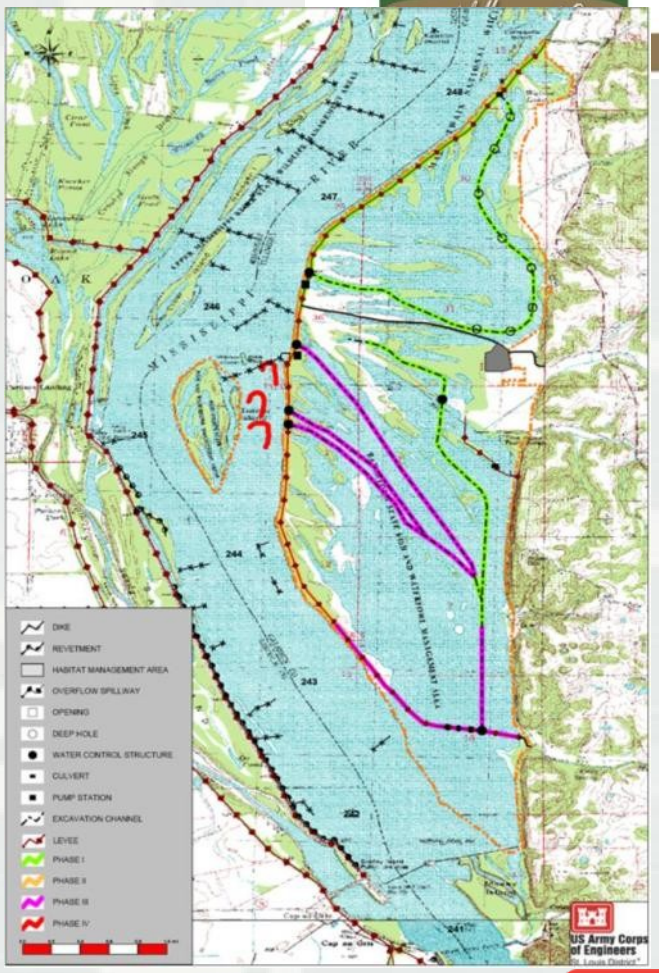
•Construction: Batchtown IL, Pools 25 & 26 Islands MO, & Ted Shanks MO

•Completed: Swan Lake, IL; Calhoun Point, IL; Clarksville Refuge, MO; Cuivre Island, MO; Dresser Island, MO; Pharrs Island, MO; Stag & Keaton Island, MO; Stump Lake, IL

•National Great Rivers Research and Education Center (UMRR-EMP LTRM) Biological Field Station, Alton
•Open River and Wetlands (UMRR-EMP LTRM) Field Station, Cape Girardeau, MO

Batchtown, IL HREP

- Pool 25, Immediately upstream of Lock and Dam 25
- Emphasis on aquatic habitat, migratory bird habitat, sedimentation reduction, ability to mimic natural hydrograph
- IDNR and FWS project sponsors
- $16M
- Features include: water control structures; berms, channels, dredging, chevrons, pump station,
reforestation, and hillside sediment control



Scouring Aquatic Structures

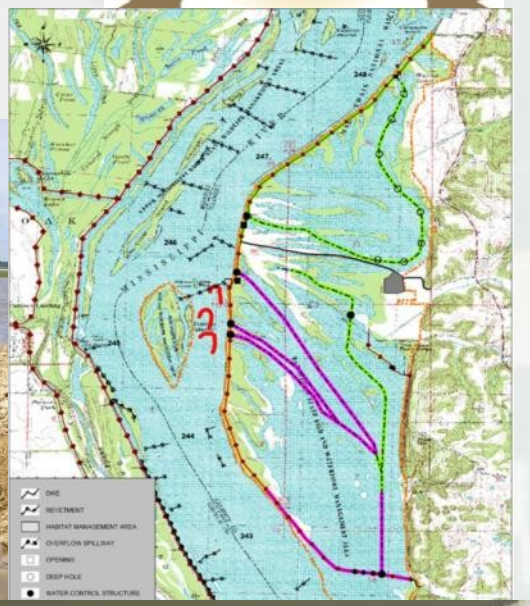
- Aquatic Habitat diversity
- Self Maintaining Deep Hole
- Overwintering Fisheries Habitat

Batchtown – Obermeyer Gate

- Ability to manipulate large volumes of water in a short period of time utilizing gravity
- Large variation in water levels immediately upstream of Lock and Dam
- Portable operation equipment
- Few moving parts that need maintenance / replacement
- One person operation
- Limited operation training required
- 80’ of opening controlled by push bottom operation

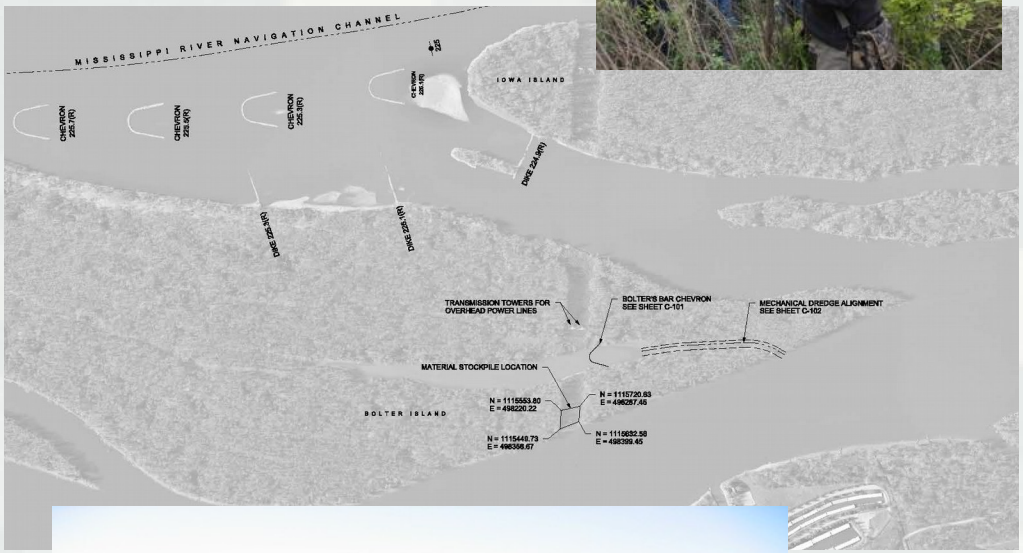
Batchtown HREP

- FWS and IDNR
- Functionally Operational
- O&M Manual underway
- Closeout scheduled FY 16
- Punch List work scheduled for FY 14/15 includes:
  - mechanical channel excavation
  - Punch list items
  - Berm surfacing
  - reforestation



Pools 25 & 26 Islands HREP

- Emphasis:
- Improved fisheries,
- increased forest
- diversity and connectivity



- O&M Sponsor: Missouri Department of Conservation
- (GP Lands)
- U.S. Fish and Wildlife Service Management Oversight
- Westport Island, Pool 25 & Dardenne Island, Pool 26
- 100 % Federal First Cost - $5.0M

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Pools 25 & 26 Islands HRFP

- Bolter's Island, Pool 26
  - Completed channel excavation
  - Scouring Rock structure underway

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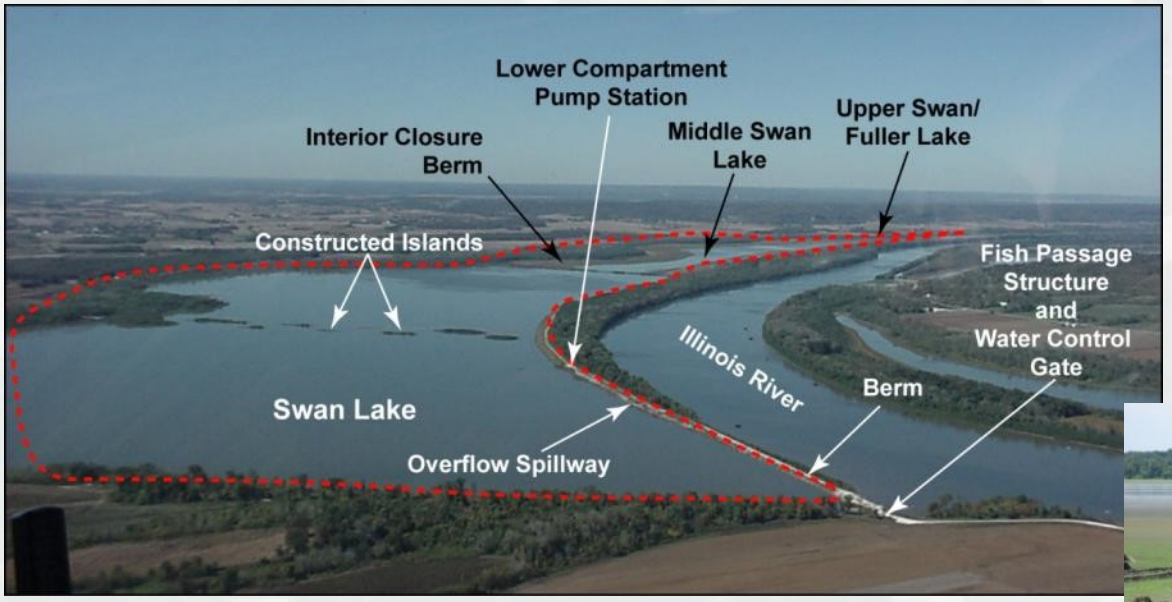
Swan Lake, IL HREP



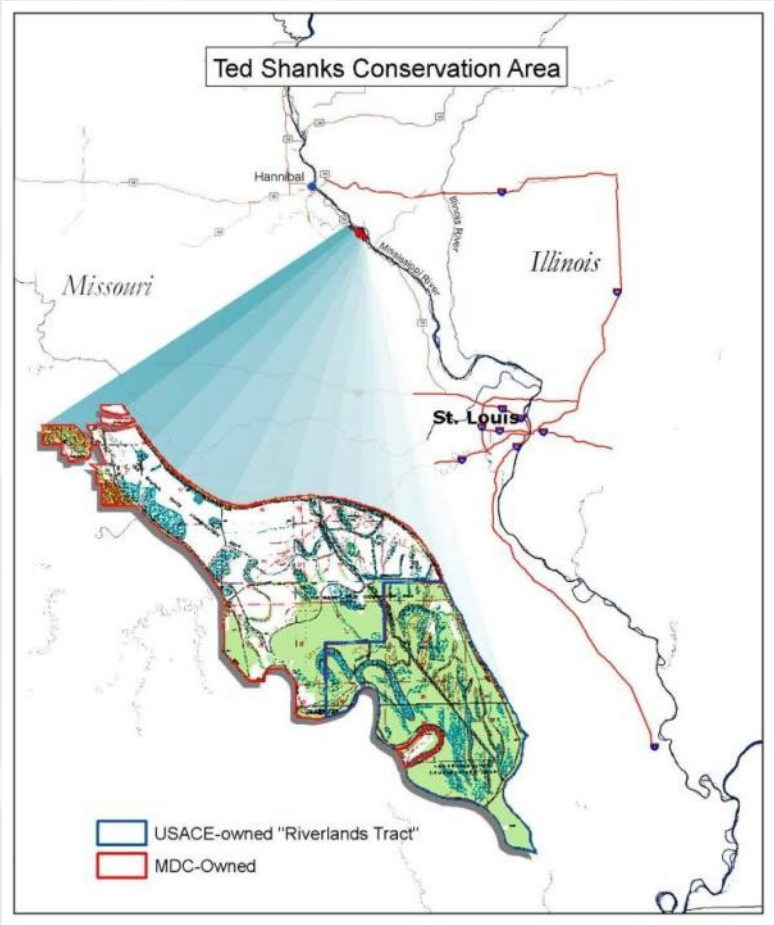
- FWS and IDNR
- Functionally Operational
- O&M Manual completed with closeout FY 15
- 100 % Federal First Cost - $17.0M
- Features included: Sediment reduction berm; Barrier island; Rock overflow structure; Upland Sediment Control Measures; 3 pump stations; water control structures; and stop logs.

Ted Shanks, MO

- Mississippi River, Pool 24
  (RM 284.5 – 288.5 R)
  Pike County, MO

- The project area is 2,900 acres USACE owned lands
  - 100 % Federal First Cost - $25.0M
  - Management of project area by MDC, with oversight by FWS

- *Project Goal: To rehabilitate and enhance the quality and diversity of wetland habitat to benefit primarily migratory birds and secondarily other wetland species*

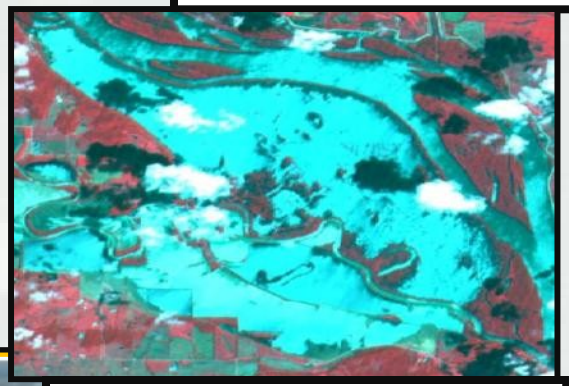


Ted Shanks, MO Opportunities

Existing Problems

- Elevated ground water table
- Inability to manage water levels and drain water out - post flood ponding
- Forest decline, no regeneration, Habitat conversion to reed canary grass, invasive fish
- Loss of aquatic habitat diversity Sedimentation in Deadman's Slough

Prior to 1993 flood



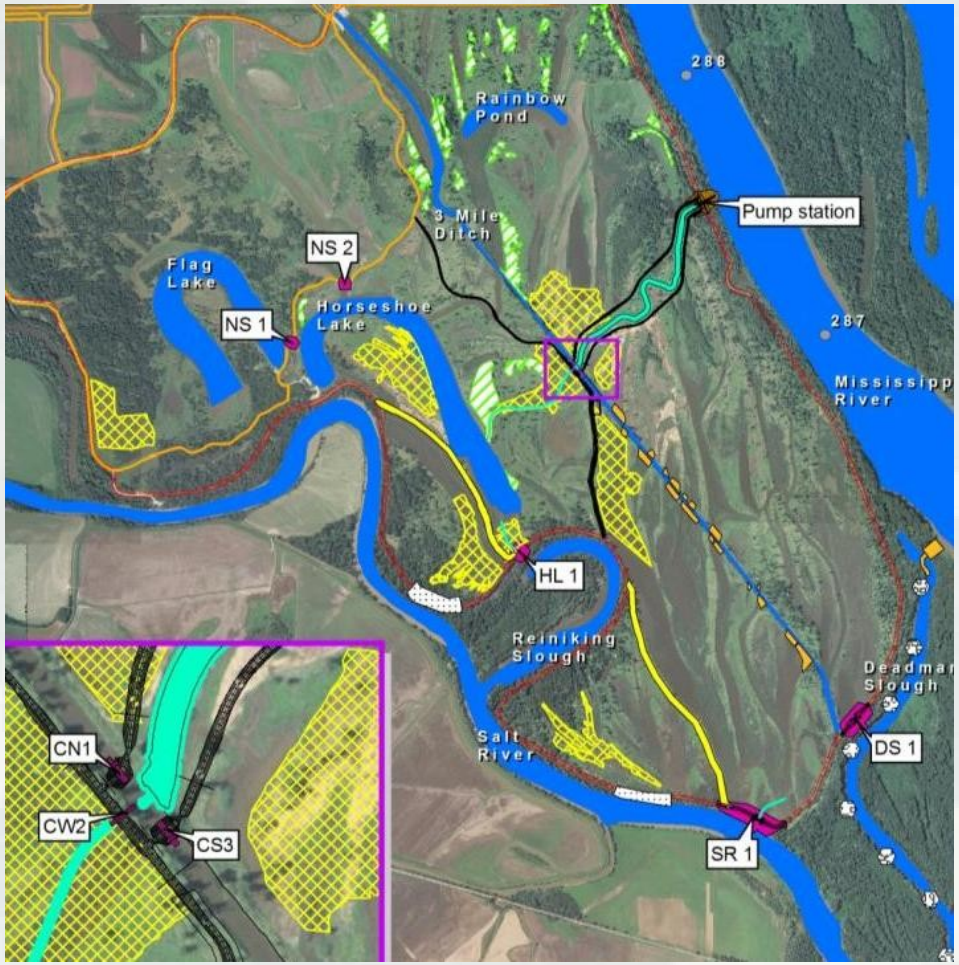
Inundating Floods

Tree mortality post flood

Ted Shanks Solutions

Benefits

- Improve water drainage, management, and supply
- Improve aquatic habitat
- Improve water drainage, management, and supply
- Increase in bottomland and floodplain forest
- Restore ecosystem functions by reconnecting the floodplain to the river through levee setbacks
- Increase habitat value over the 50-year project life



Ted Shanks MO Construction

- Precast concrete water control structure with slide gate and sheet pile wing walls
- Precast Concrete Structure - *reduces time in the field for construction, increases speed of construction, reduces construction risk, increases efficiency and reduces costs*
- Foundations for wet areas
  - Multiple layers of geo-textile and crushed stone
  - Mud slabs
  - Exterior Berm Setback (levee)
  - Opening of the floodplain

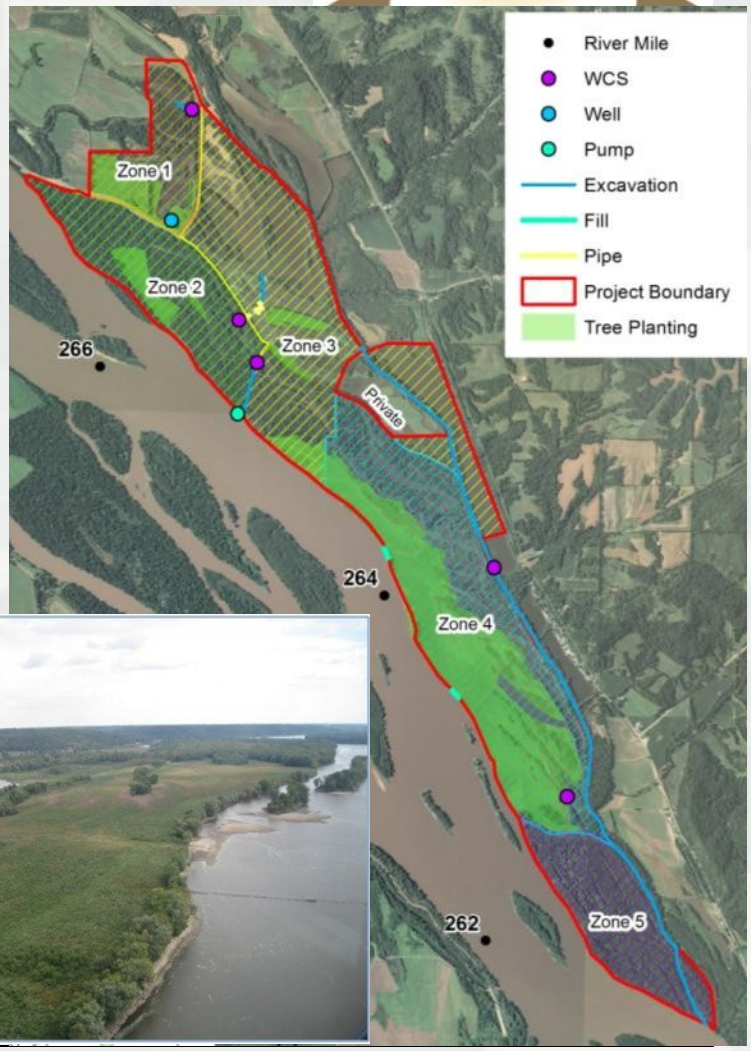
Ted Shanks Status

- Completed CW 2 Water control and interior berms
- Completed South Berm setback and existing berm degrade with funds transfer from St. Paul
- SR1 nearing completion
- HL1 underway
- North Berm Setback underway
- CN1, CN3, and channel delivery awarded in June FY14
- NS1, NS2, & DS1 awarded in Sep FY 14
- Pump Station in design for award in FY15

SR1 flood of 2014

Rip Rap Landing, IL

- Located in Calhoun County, IL, near village of Mozier, RM 260.5-267, Pool 25, Mississippi River
- Approximately 2,338 acres (2,055 owned by IDNR with 792 acres in WRP and 283 USACE General Plan Lands)
- Estimated Project Costs $10M
- Current Status – Submit Feasibility Report to MVD 1st Qtr FY 15.



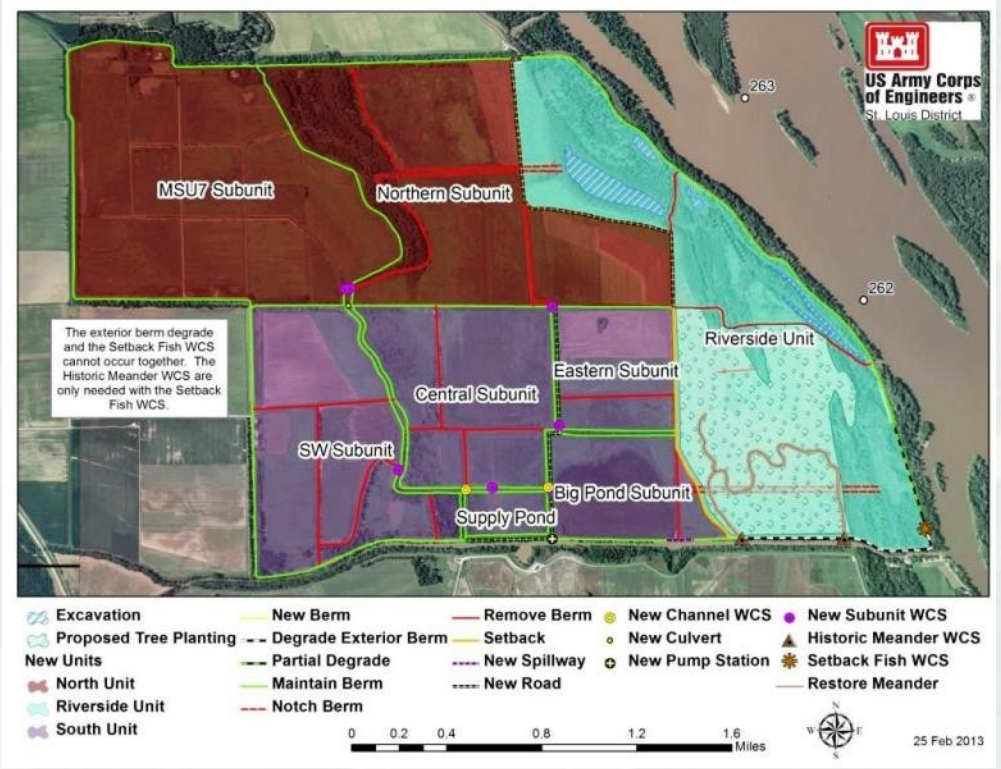
Clarence Cannon NWR, MO

Status

- Report Approved May 2014
- P&S packages FY 15
- Award FY16

Major Features

- Improve moist soil habitat and water level management
- Promote floodplain connectivity and bottomland hardwoods
- 100% federal, $30 M
- 3750 Acres



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Piasa & Eagles Nest Islands, IL

FY 15

- INDR Project Sponsor
- Mussel survey completed
- Continue Planning
- Initiate Micro Model Study

Highlights

- Low potential O&M requirements
- Uses river to create and maintain habitat diversity
- $5M – 10M

Opportunities, IL & MO

Pooled River

- Glades / Godar Wetland Complexes, IL River
- Reds Landing, IL
- Missouri Islands & West Alton, MO
- Pool 24 Islands, MO
- NGO opportunities
- Regional Call for new fact sheets and prioritization

Middle Mississippi, IL & MO

Challenges

- Limited sponsor owned lands
- Untested authority (Endangered Species)
- O & M costs in general
- O &M of river training structures
- Cost sharing
- LERRDS crediting 25 / 35%
- Navigational Servitude
- Other issues….Forest Service lands, WIK, NESP, Regulating Works…

Middle Mississippi River Initiative

- Work with partners to create a renewed focus on the Middle Mississippi River

- New FWS management of refuge lands

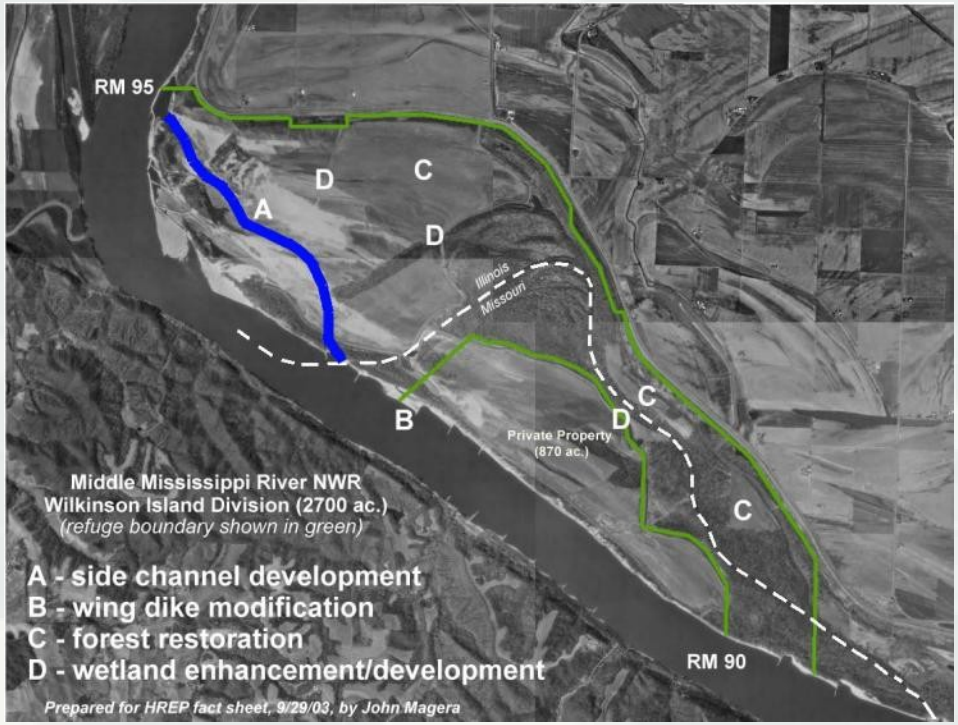
- Re-inventory existing resources / conditions

- Work with partners, regional UMRR, and MVD (vertical chain of command) to develop path forward on projects without clear guidance or with authority that has not been previously tested on a project by project basis

- Reaching out to Forest Service, Ducks Unlimited, others…

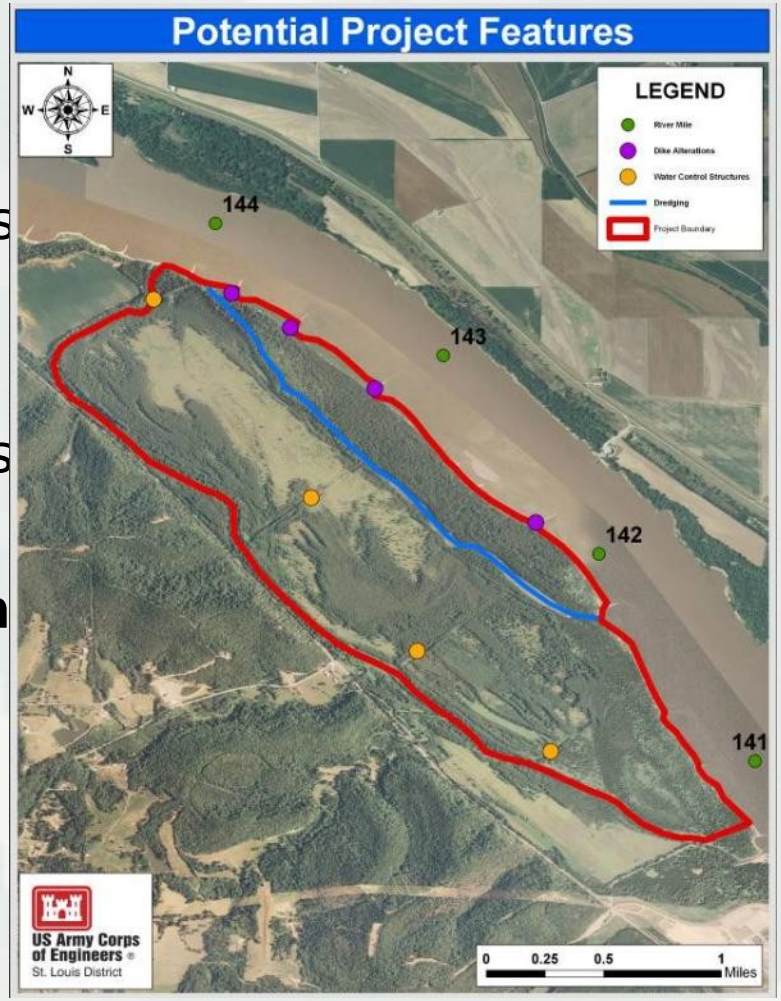
Wilkinson Island, IL

- Reduce sediment
- Promote bottomland forest
- Back water flooding
- **Approved fact sheet**
- **FWS owned Lands**
- Initial planning started



Harlow Island, MO

- Open River
- MR Miles 140.5 to 144
- Approximately 1225 acres
- Create aquatic habitat
- Reduce sediment
- Promote bottomland fores
- **Approved Fact Sheet**
- **FWS owned federal lan**



Up Coming

- Call for New Fact Sheets FY15
- Report to Congress FY16
- Need to continue planning – smaller projects with sensitivity to O&M requirements
- Open River Opportunities
- NGO Opportunities
- New Partnership Opportunities

Economic Related Activity

-91.1 million U.S. residents fished, hunted, or wildlife watched in 2011 and they spent $145 billion on their activities (According to the National Survey of Hunting, Fishing, and Wildlife Associated Recreation – conducted every 5 years)

Our ecosystem restoration work helps conserve, maintain, and restore resource functions.

Partnering

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